

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-2 (Canceled)

Claim 3 (Currently Amended): A wiring structure of a semiconductor device ~~as claimed in Claim 2~~, comprising:

a first insulating film having plural grooves formed therein, which has an interface in a horizontal direction between adjoining grooves;

plural wiring films formed in the grooves of the first insulating film to protrude above the interface;

plural barrier films formed on bottoms of the wiring films, and formed on side faces of the wiring films to a height exceeding the interface; and

plural cap films formed at least on upper faces of the wiring films, and which are each separated by the grooves,

wherein the cap films are formed on parts protruding above the interface and are separated from each other by the interface, and

wherein the cap films are formed only on ~~the upper~~ uppermost faces of the wiring films and the barrier films.

Claim 4 (Currently Amended): A wiring structure of a semiconductor device as claimed in Claim 3 [[2]], wherein the cap films are an insulating film containing Si_xN_y , Si_xC_y , $\text{Si}_x\text{O}_y\text{N}_z$, or Si_xC_y as a principal composition.

Claim 5 (Currently Amended): A wiring structure of a semiconductor device as claimed in Claim 3 [[2]], wherein the cap films are a metal film made of Ta_xN_y , Ta, or $\text{Ta}_x\text{Si}_y\text{N}_z$.

Claim 6 (Currently Amended): A wiring structure of a semiconductor device as claimed in Claim 3 [[2]], wherein the cap films are a metal film made of Ti_xN_y or $\text{Ti}_x\text{Si}_y\text{N}_z$.

Claim 7 (Currently Amended): A wiring structure of a semiconductor device as claimed in Claim 3 [[2]], wherein the cap films are a metal film made of W_xN_y or $\text{W}_x\text{Si}_y\text{N}_z$.

Claim 8 (Canceled)

Claim 9 (Currently Amended): A wiring structure of a semiconductor device as claimed in Claim 3 [[1]], wherein the cap films are a metal film containing tungsten [[W]] as a principal composition.

Claims 10-11 (Canceled)

Claim 12 (Currently Amended): A wiring structure of a semiconductor device ~~as claimed in Claim 11~~, comprising:

a first insulating film having plural grooves formed therein, which has an interface in a horizontal direction between adjoining grooves;

plural wiring films formed in the grooves of the first insulating film to protrude above the interface;

plural barrier films formed on bottoms of the wiring films, and formed on side faces of the wiring films to a height exceeding the interface; and

plural cap films formed at least on upper faces of the wiring films, and which are each separated by the grooves,

wherein the first insulating film has plural protrusions protruding from the interface, and the grooves are formed in the protrusions,

wherein the upper faces of the wiring films and the barrier films are substantially coincident with upper ends of the grooves, and

wherein the protrusions are formed through etching the first insulating film, using the cap films as a mask, and ~~the upper faces of the cap films have substantially the same shape as uppermost~~ with the upper faces of the protrusions.

Claim 13 (Original): A wiring structure of a semiconductor device as claimed in Claim 12, wherein the cap films are a metal film made of Ta_xN_y , Ta, or $Ta_xSi_yN_z$.

Claim 14 (Original): A wiring structure of a semiconductor device as claimed in Claim 12, wherein the cap films are a metal film made of Ti_xN_y or $Ti_xSi_yN_z$.

Claim 15 (Original): A wiring structure of a semiconductor device as claimed in Claim 12, wherein the cap films are a metal film made of W_xN_y or $W_xSi_yN_z$.

Claim 16 (Original): A wiring structure of a semiconductor device as claimed in Claim 12, wherein the cap films are an insulating film containing Si_xN_y , $Si_xO_yN_z$, Si_xC_y , or Si_xC_y as a principal composition.

Claims 17-27 (Canceled)

Claim 28 (Currently Amended): A wiring structure of a semiconductor device ~~as claimed in Claim 26~~, comprising:

a first insulating film having plural protrusions in which grooves are formed, and which has an interface in a horizontal direction between adjoining protrusions;

plural wiring films embedded in the grooves on barrier films;

plural first cap films formed on upper faces of the protrusions; and

second cap films formed on the first cap films and the first insulating film,

wherein the protrusions are formed through etching the first insulating film, using the first cap films as a mask, and ~~the upper faces of the first cap films have~~

substantially the same shape as uppermost ~~with the upper~~ faces of the protrusions.

Claim 29 (Original): A wiring structure of a semiconductor device as claimed in Claim 28, wherein the first cap films are a metal film made of Ta_xN_y , Ta, or $Ta_xSi_yN_z$.

Claim 30 (Original): A wiring structure of a semiconductor device as claimed in Claim 28, wherein the first cap films are a metal film made of Ti_xN_y or $Ti_xSi_yN_z$.

Claim 31 (Original): A wiring structure of a semiconductor device as claimed in Claim 28, wherein the first cap films are a metal film made of W_xN_y or $W_xSi_yN_z$.

Claim 32 (Original): A wiring structure of a semiconductor device as claimed in Claim 28, wherein the second cap films are an insulating film containing Si_xN_y , $Si_xO_yN_z$, Si_xC_y , or Si_xC_y as a principal composition.

Claim 33 (New): A wiring structure of a semiconductor device as claimed in Claim 12, wherein the cap films are a metal film containing tungsten as a principal composition.

Claim 34 (New): A wiring structure of a semiconductor device as claimed in Claim 28, wherein the first cap films are a metal film containing tungsten as a principal composition.